II MEF FWD INFORMATION TECHNOLOGY OPERATIONS OIF 04-06

Colonel Pete Talleri

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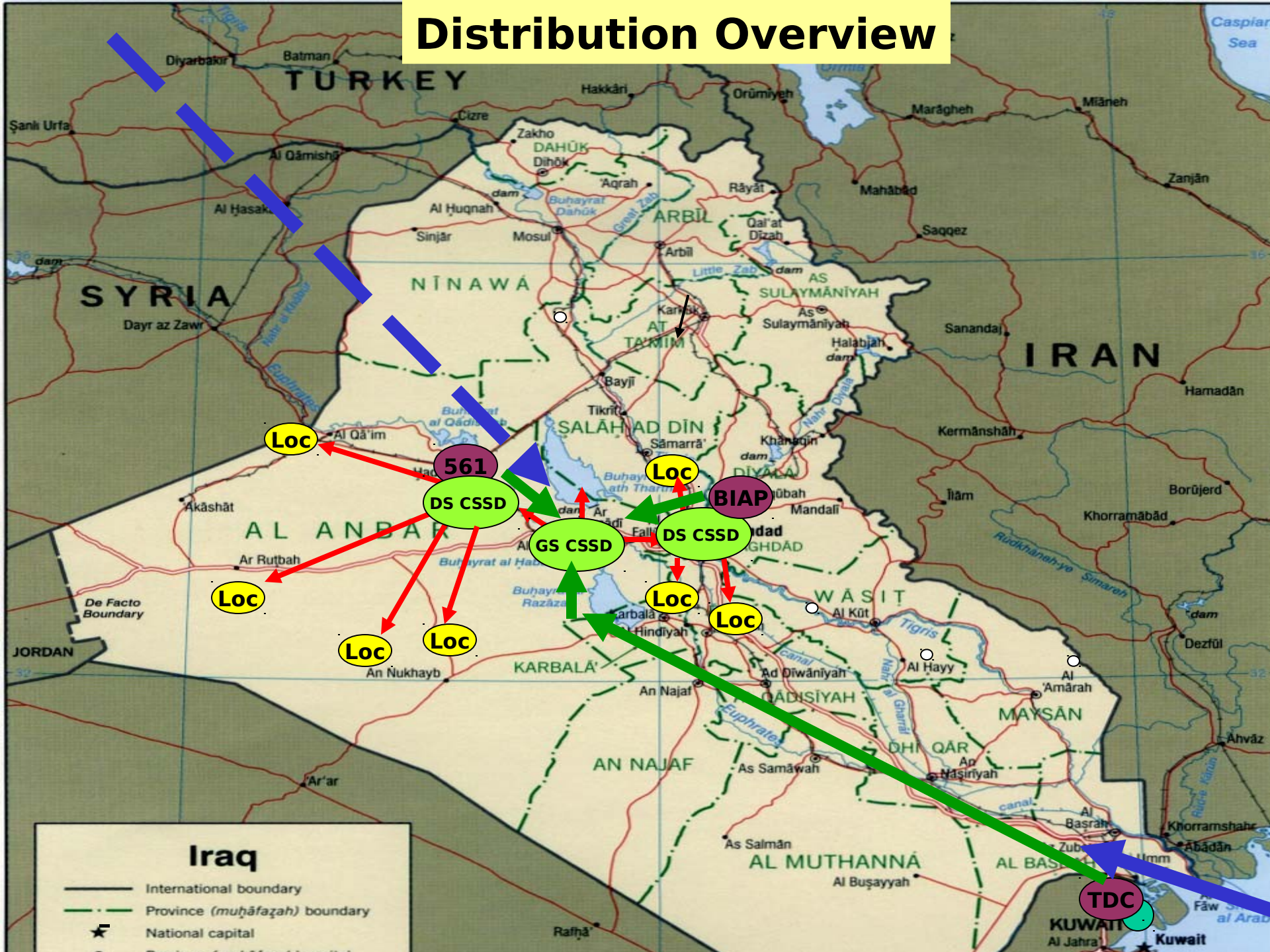
2d Supply Battalion

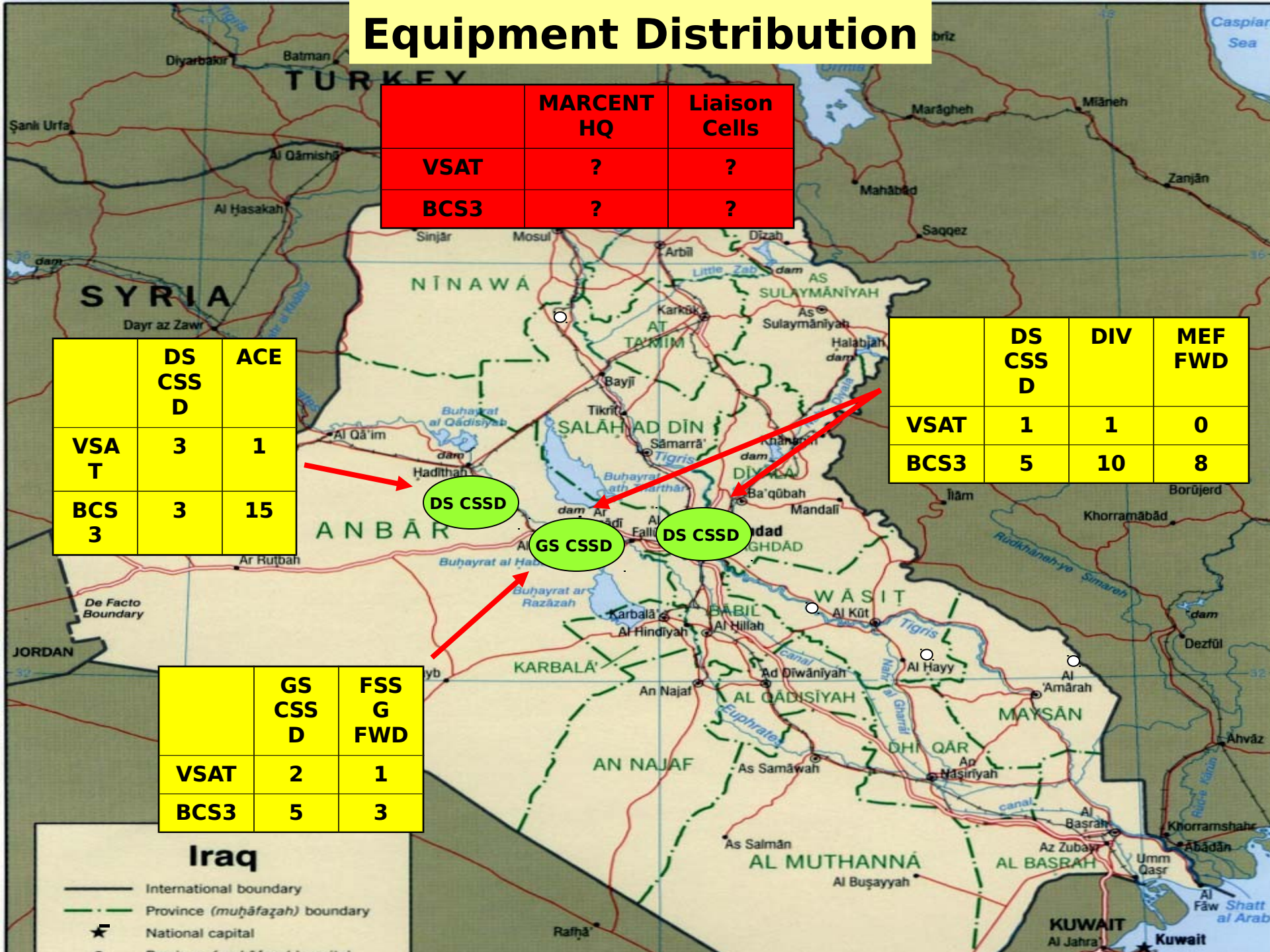
“ The MAGTF is breaking new ground by being able to track everything right down to the last tactical mile.

The process that the Marine Corps is going through is coming together, and they are setting the stage for the rest of the services to follow suit.

The lessons learned are leading to greater capability in the joint fight.”


Distribution Overview
Loc
561
DS CSSD
GS CSSD
DS CSSD
BIAP
Loc
Loc
Loc
Loc
Loc
Loc
TDC
TURKEY
SYRIA
IRAN
JORDAN
KUWAIT
DAHŪK
ARBĪL
NĪNAWÁ
AS SULAYMĀNĪYAH
AT TA'MIM
SALĀḤ AD DĪN
DIYĀLÁ
AL ANBAR
BAGHDĀD
WĀSIṬ
KARBALÁ'
AN NAJAF
QĀDISĪYAH
MAYSĀN
DHĪ QĀR
AL MUTHANNÁ
Iraq
International boundary
Province (muḥāfaẓah) boundary
National capital

Equipment Distribution



	MARCENT HQ	Liaison Cells
VSAT	?	?
BCS3	?	?

	DS CSSD	ACE
VSAT	3	1
BCS3	3	15

	DS CSSD	DIV	MEF FWD
VSAT	1	1	0
BCS3	5	10	8

	GS CSSD	FSSG FWD
VSAT	2	1
BCS3	5	3

Iraq

- International boundary
- Province (*muḥāfaẓah*) boundary
- National capital

MAGTF Distribution Center

CWO2 Chris Douglas

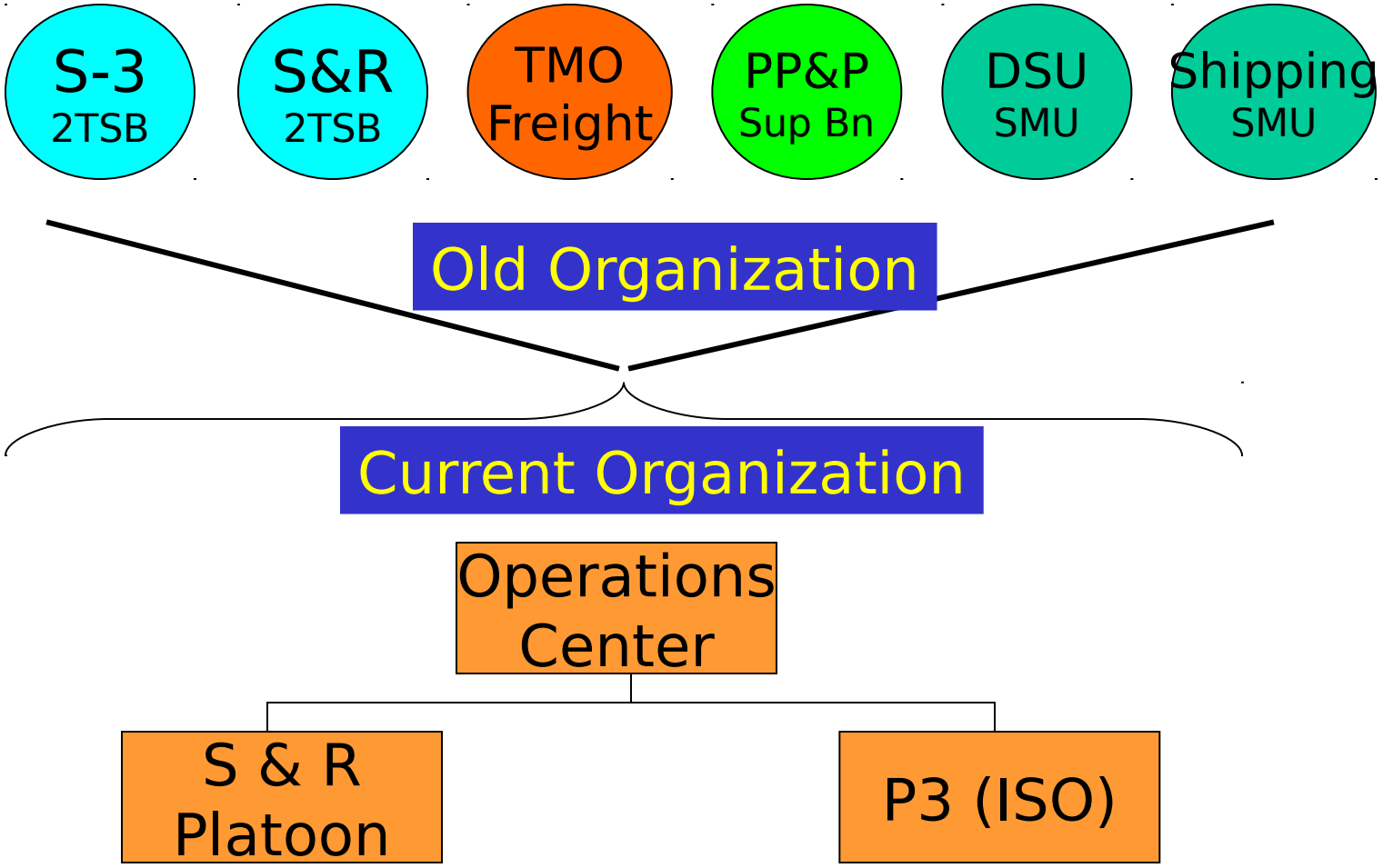
2d Supply Battalion

<u>MAGTF Distribution Center Mission</u>

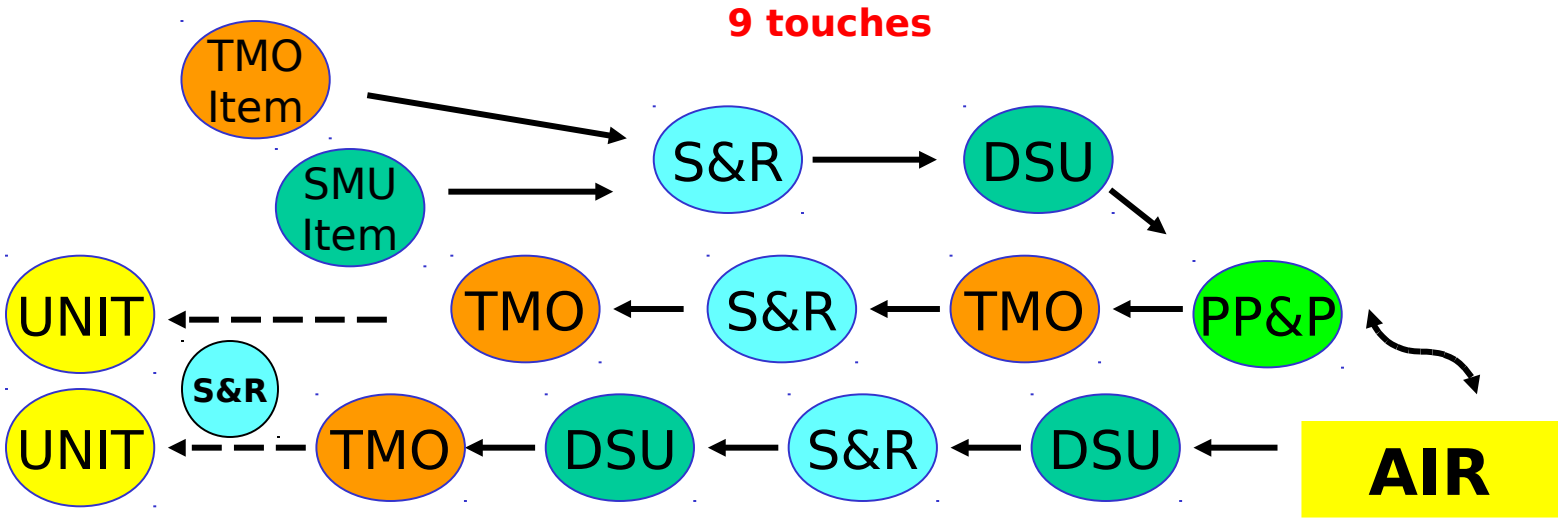
Provide a consolidated distribution focal point and facilitate in-transit visibility for II MEF in order to maintain throughput velocity and sustain operational tempo.

MAGTF DISTRIBUTION COMPANY

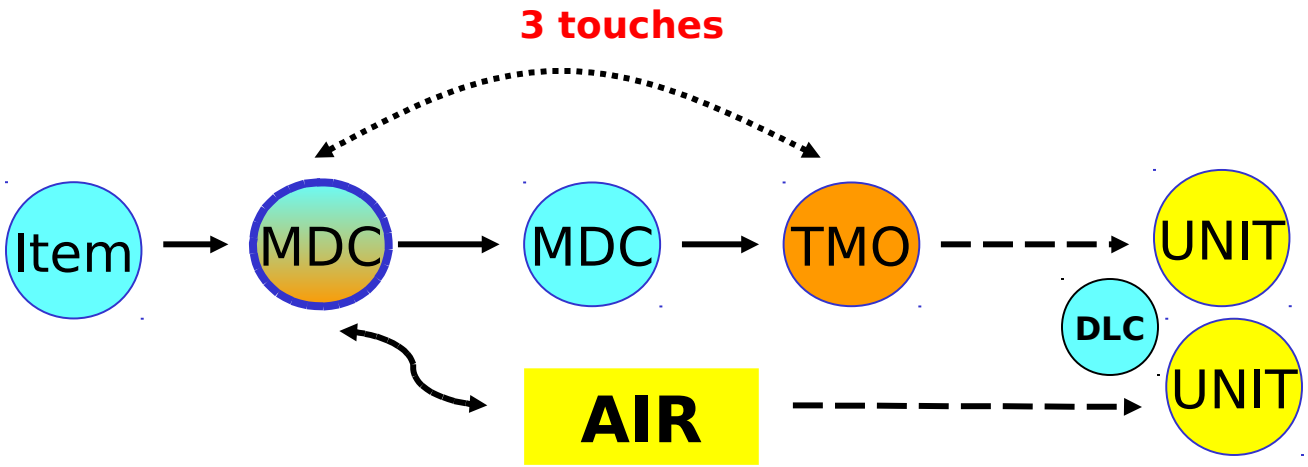
2nd Supply Battalion



“Previous” DISTRIBUTION PROCESS MAP

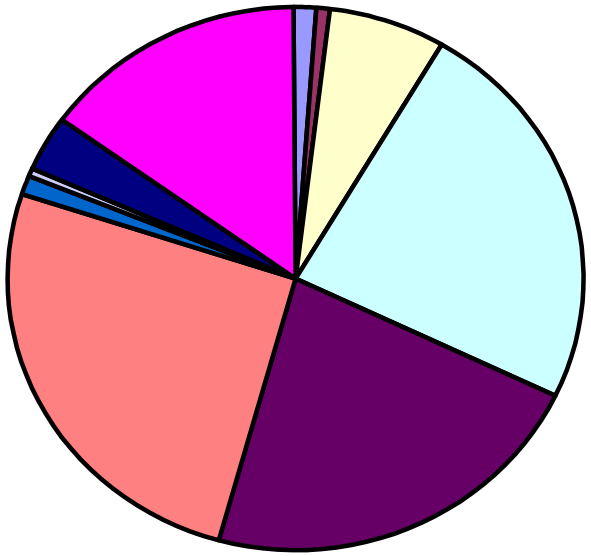


“Current” DISTRIBUTION PROCESS MAP



2d Supply Battalion

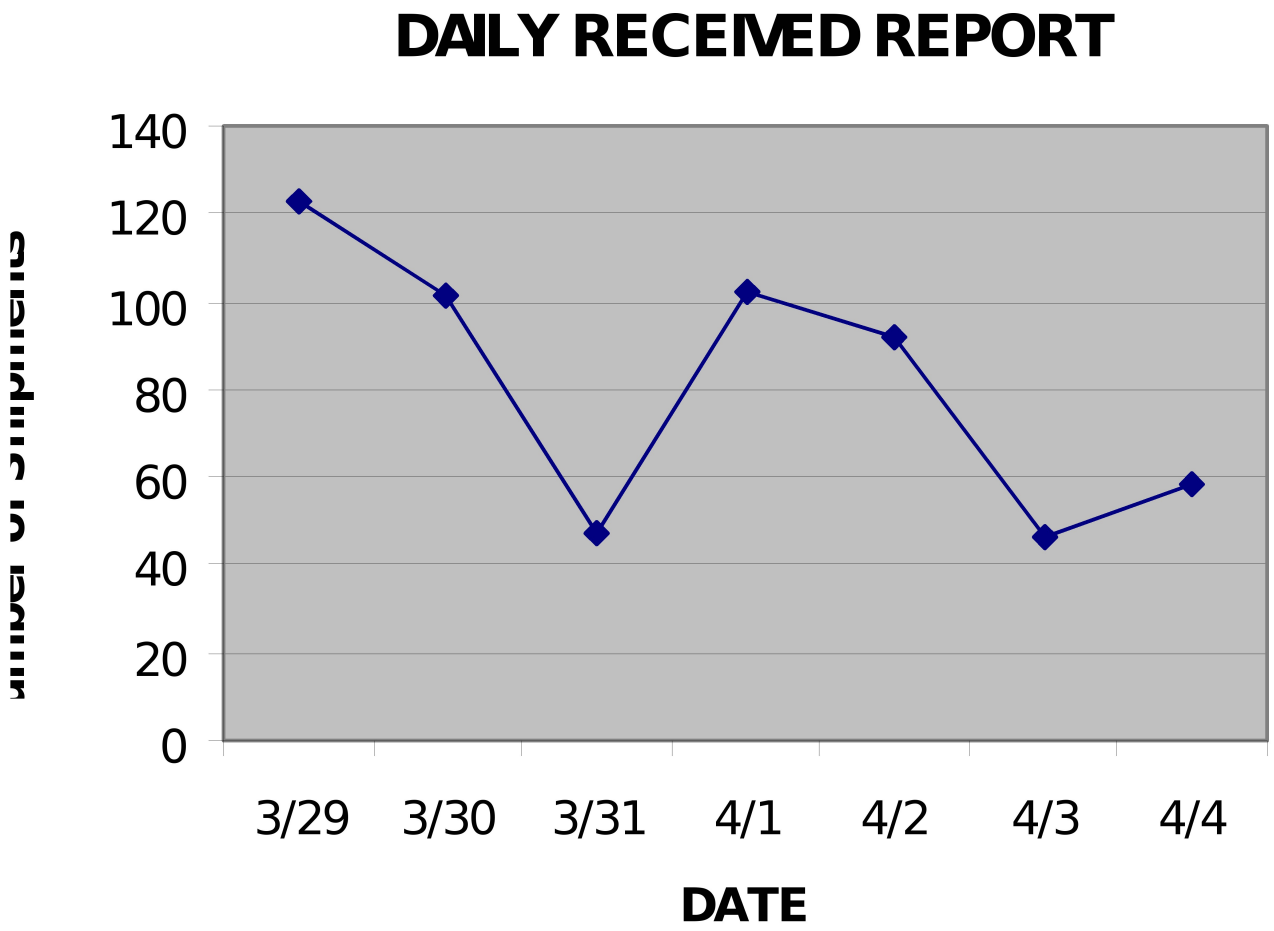
MDC Company Table of Organization



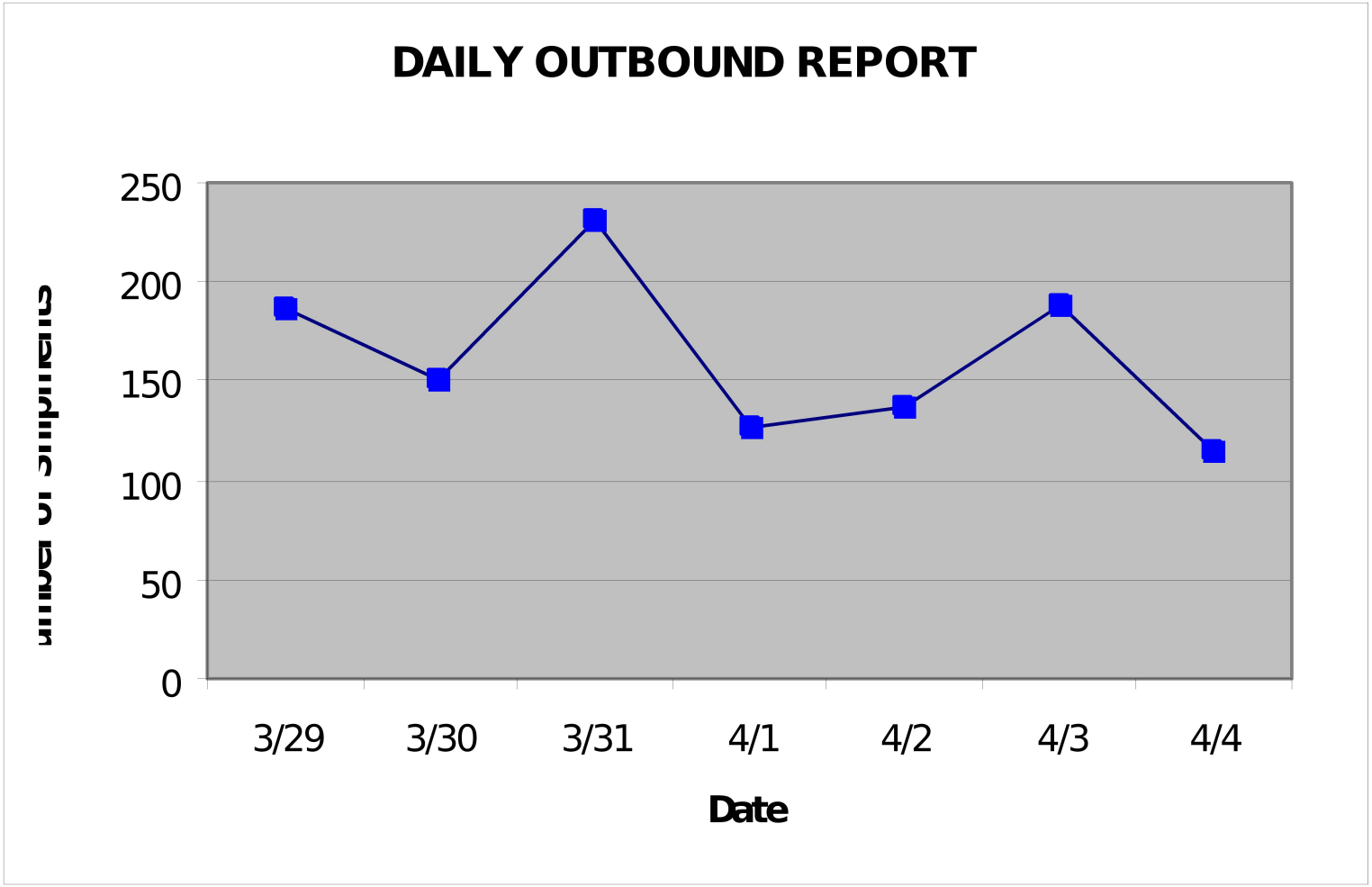
0402/30xx 0431 3043 3051 3052
31xx 35XX 9999 Civilian Unsourced

Focus of Distribution

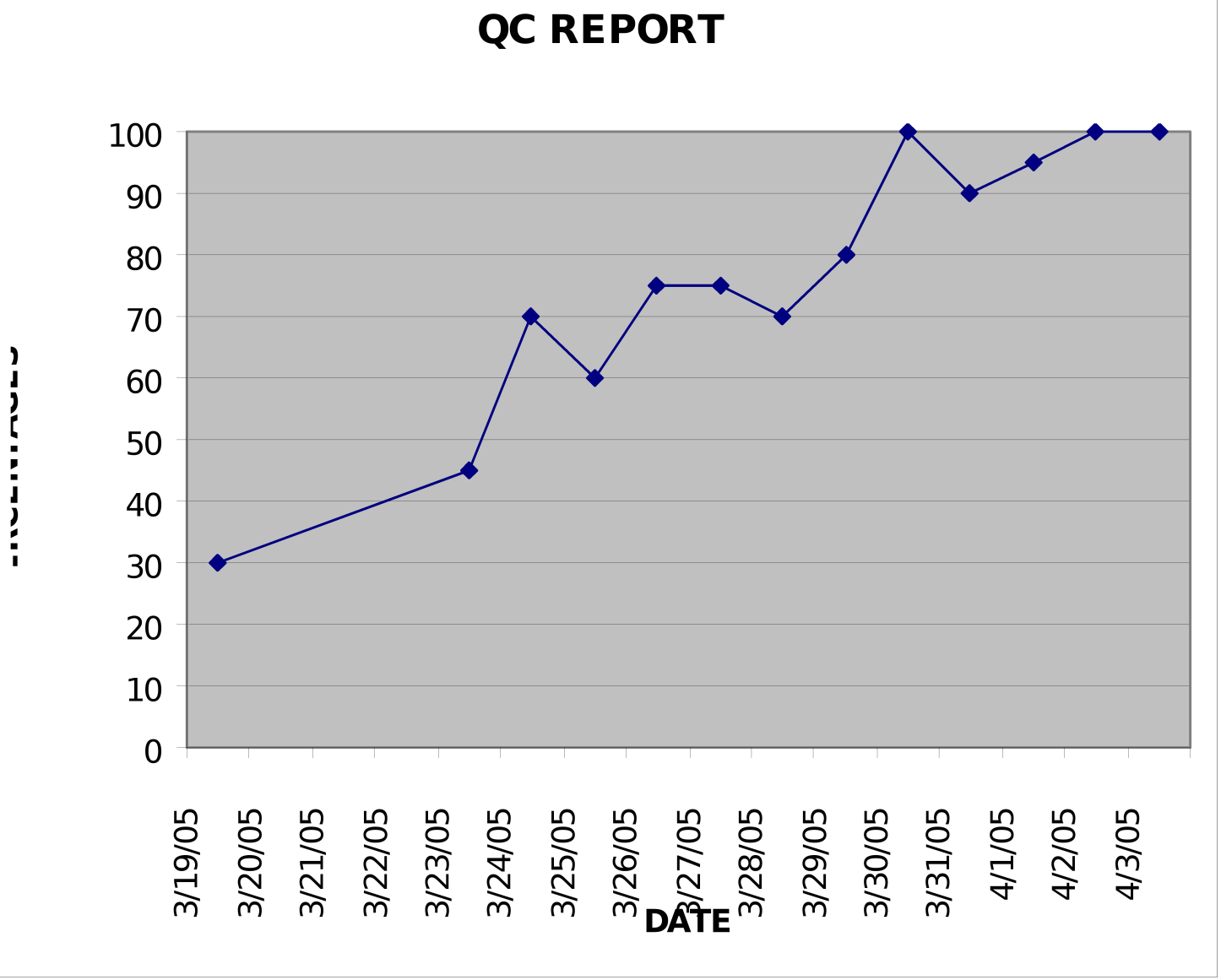
- Transparency
- Planning
  - Transportation
  - Supply
  - Distribution
  - Synchronization
- Visibility
  - Tags
  - Interrogators
  - Vehicle Tracking Systems
  - BCS3 - ITV Server & “Swivel Chair” Systems
- Influence
  - Routes
  - Pure Pallets
  - S&R
  - Distribution Liaison Cells


DAILY RECEIVED REPORT
140
120
100
80
60
40
20
0
3/29
3/30
3/31
4/1
4/2
4/3
4/4
DATE

2d Supply Battalion



2d Supply Battalion



Focus of Distribution

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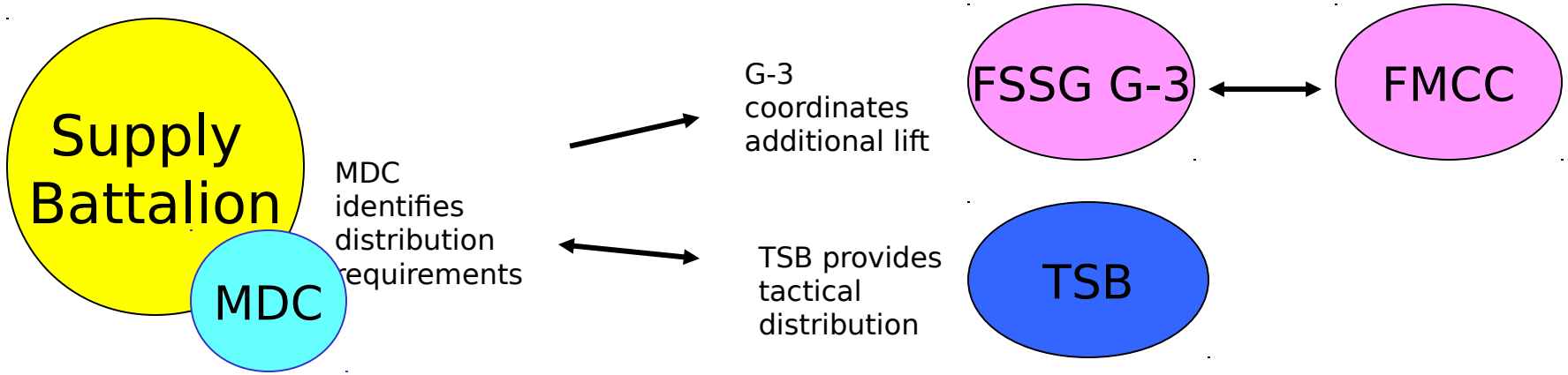
  - Distribution Liaison Cells

How to achieve distribution effectiveness?

- Unity of command and purpose
  - "Train as we Fight"
  - ISO "Face of the MDC"
  - MDOC "Voice of the MDC"
- MDC responsible for distribution vice supported unit
- Maximize IT enablers
- Parallel process vice sequential process
- Leverage Base TMO capabilities

MDC Relationships

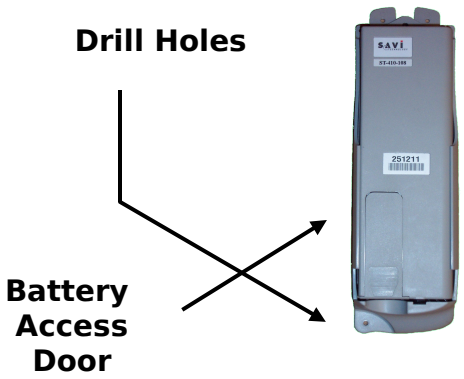
- "Inventory is distribution moving at the speed of zero."
- S&R, Transportation, Warehousing, Link to Procurement and Source of Supply (SMU, DSSC, MEDLOG, AMMO, HAZMAT, Rations)
  - TMO
  - FSSG G-3 LMCC
  - Contracting
  - TSB
  - MEF G-4



IT Enablers

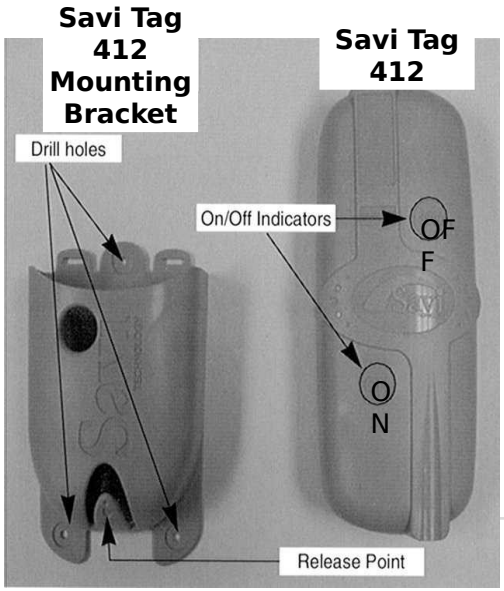
Capt Greg Pace

LOG AIS HARDWARE CAPABILITIES



Active RF 410 Tag - 128K 433.9 MHz Tag

- Stores 1150 lines of data
- Data sent to In-Transit Visibility (ITV) server
- 3-5 year battery life
- Cost $109 per tag
- Being replaced by SAVI 654 tag ($70 per tag)



Active RF 412 Tag

Battery operated

- 4KB read/write memory
- On/off capability

To turn the 412 tag on and off, rotate the tag so the words “on” or “off” show in the hole in the mounting bracket.

RFID Readers

Fixed Interrogator

- Gain nodal ITV

Early Entry Deployment Support Kit (EEDSK)

- Port and Area Support RFID

Hand-held Interrogators

- Yard management and item searches

Satellite Tracking Devices

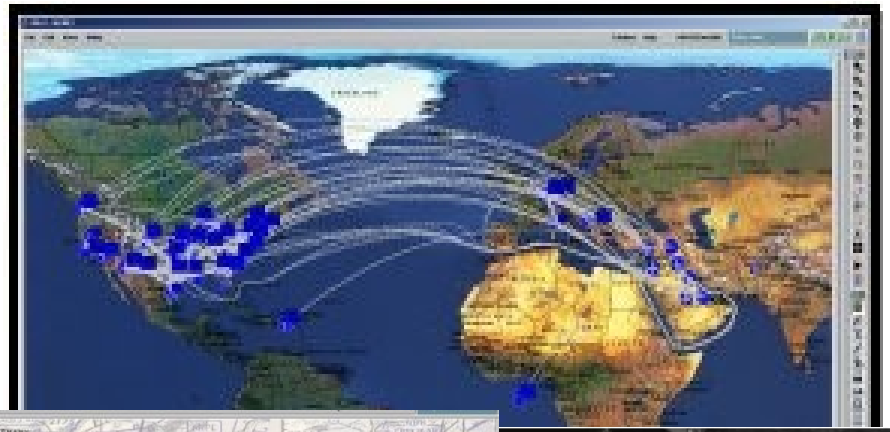
Vistars

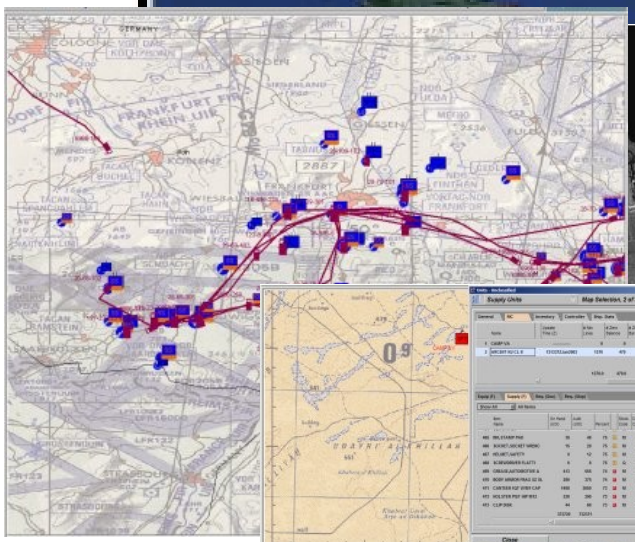
- Regional Coverage
- “Dumb Tracker”
- Used extensively throughout OIF

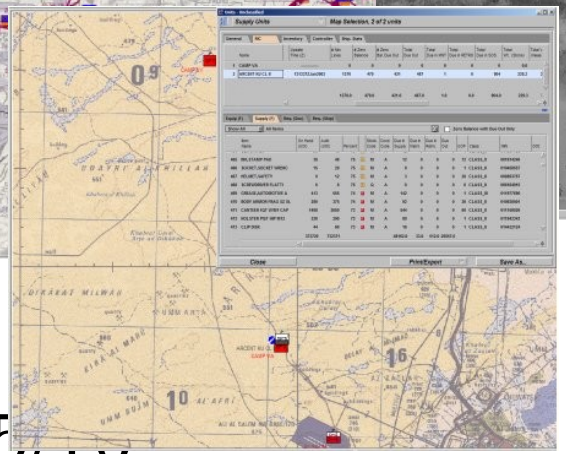
GPS Iridium Modem

- Global Coverage
- “Dumb Tracker”
- Marine Corps “unique”

Battle Command Sustainment Support System Functionality

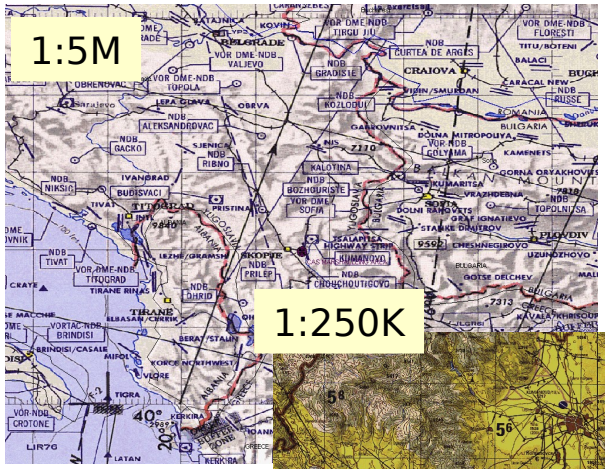


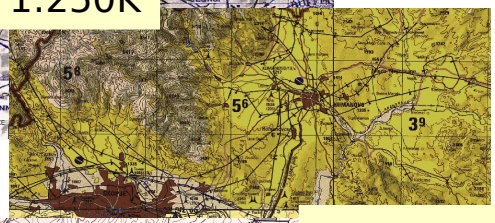


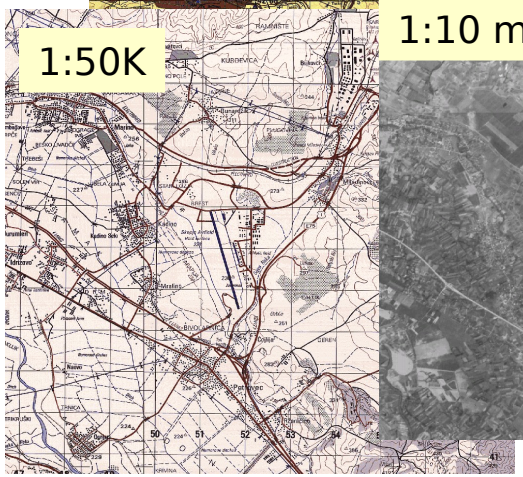


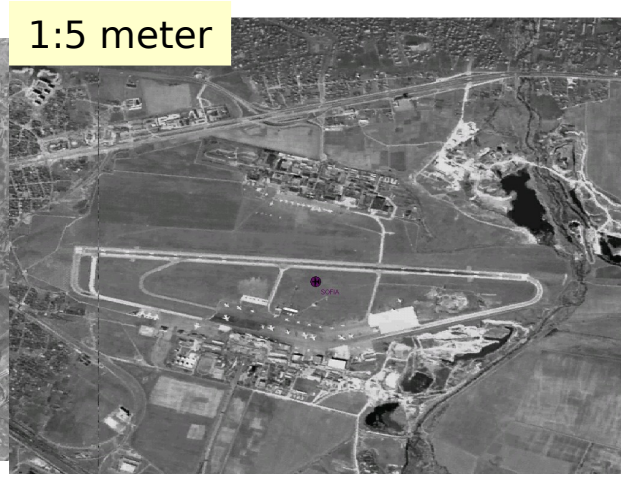
- **Map Based Views**
- **TPFDD Analysis**
- **Deployment Rehearsals**
- **ITV Tracking**
- **Supply Point Visibility**
- **Intelligent Agents**
- **March Credits**

BCS3 – Mapping Capabilities







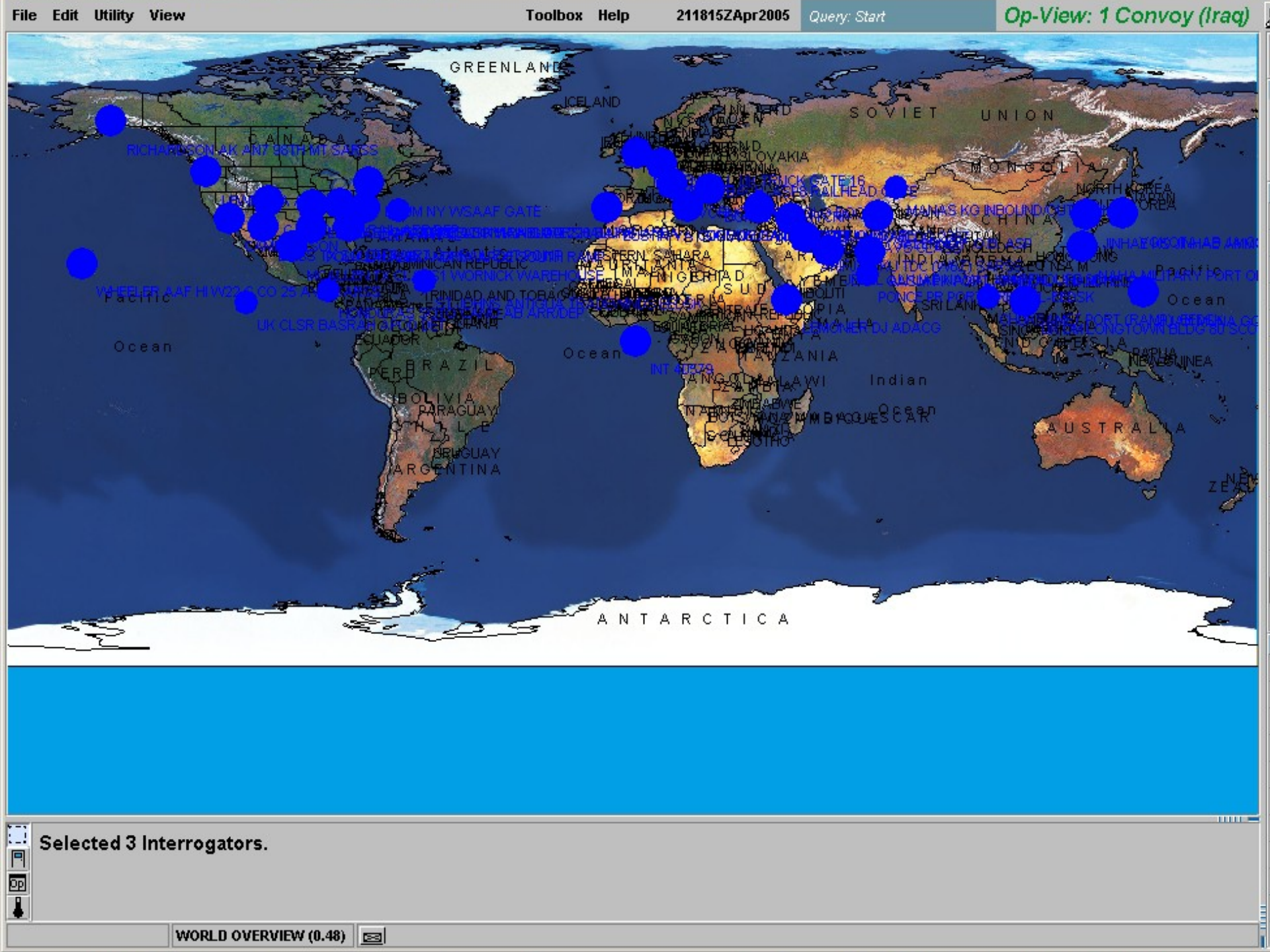


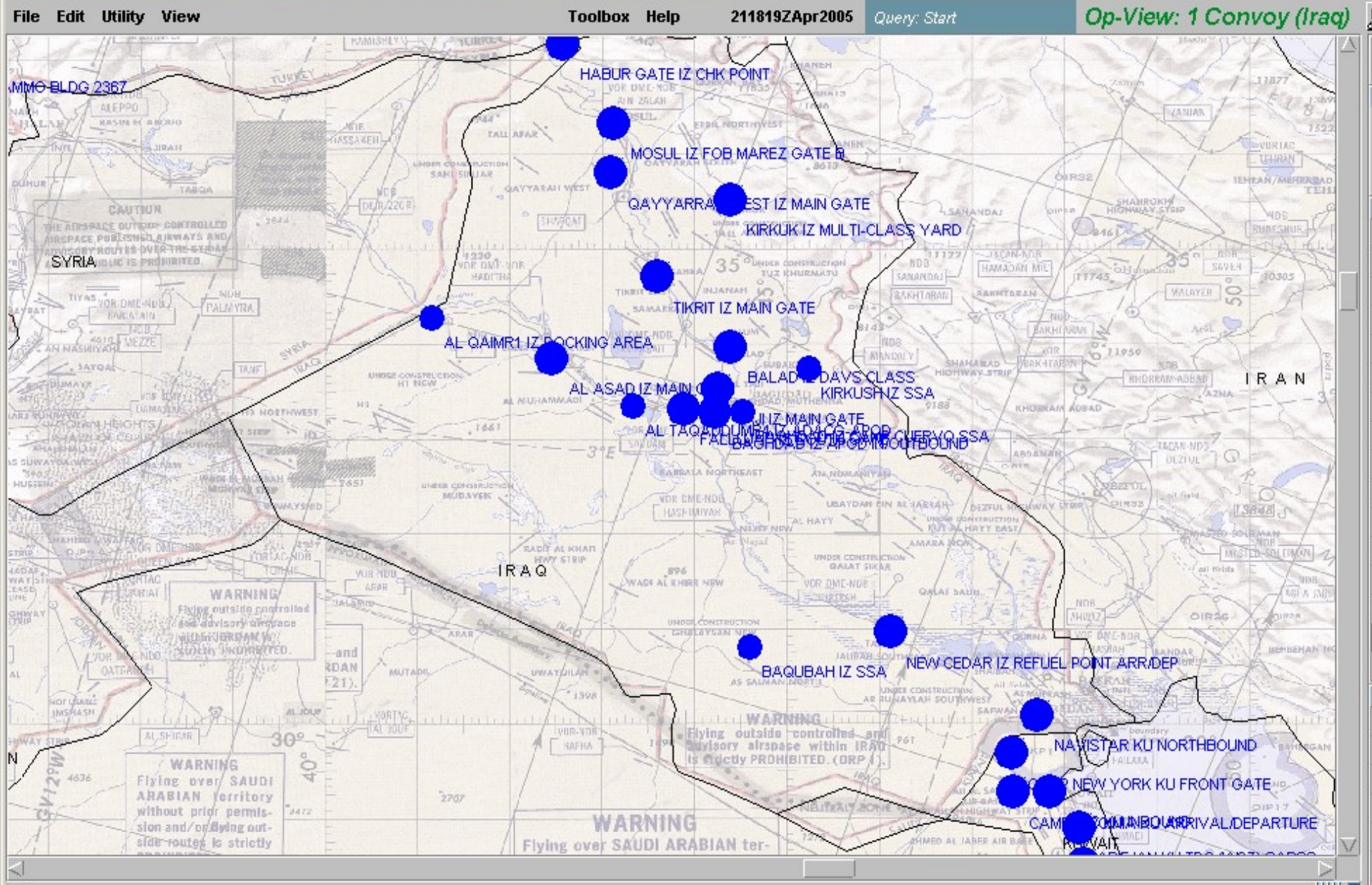
National Imagery and Mapping Agency

- Compressed ARC Digitized Raster Graphics (CADRG)
  - 1:5M meter to 1:50K meter scale
- Controlled Imagery Based (CIB)
  - 1:10 Meter to 1:1M Satellite Imagery
- Digital Terrain Elevation Data (DTED)
- Digital Vector Map – World View

Note
1:1M images are Secret NOFORN

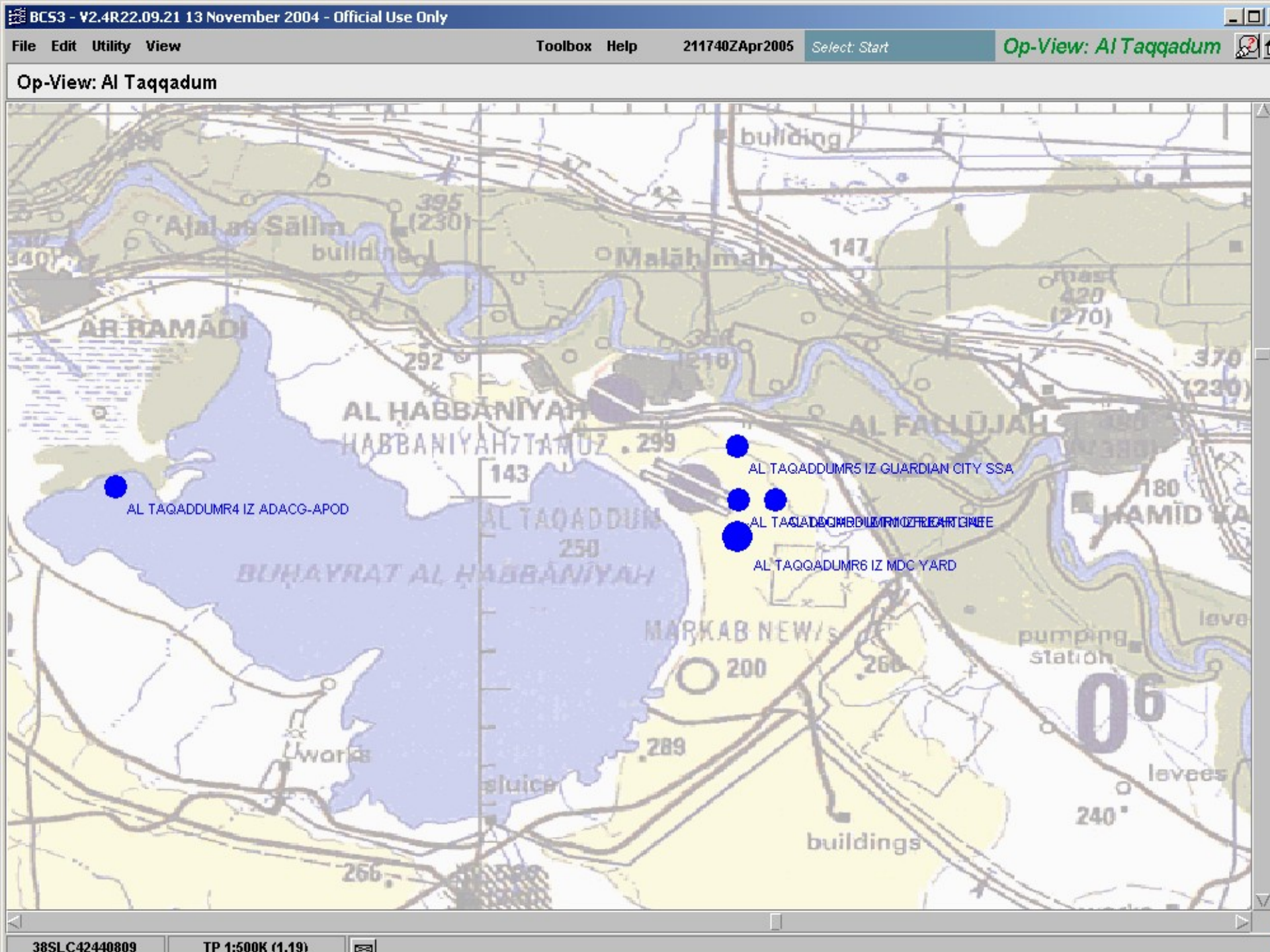
Increased interoperability through Standard NIMA

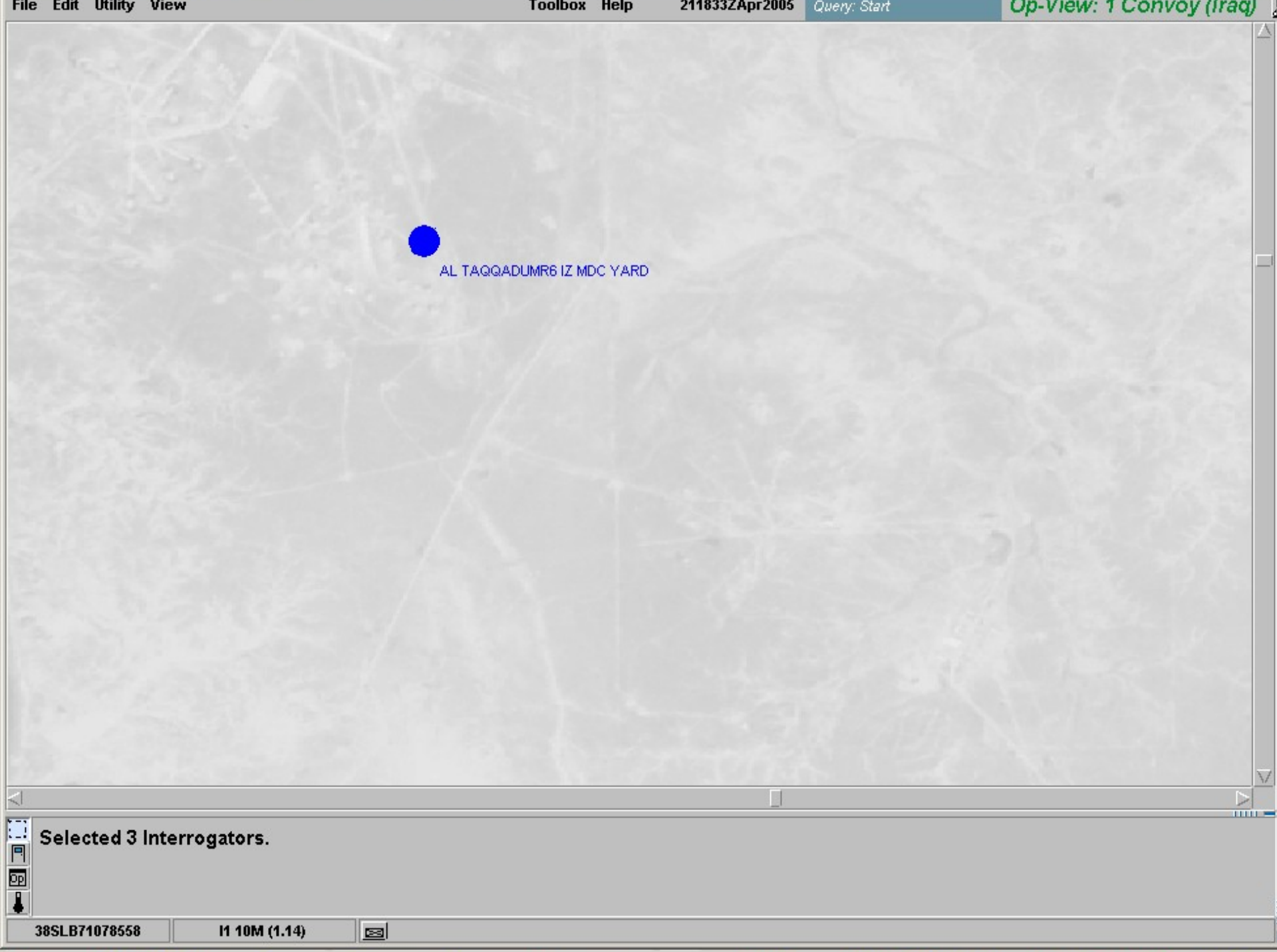

File Edit Utility View
Toolbox Help
211815ZApr2005
Query: Start
Op-View: 1 Convoy (Iraq)
GREENLAND
ICELAND
SOVIET UNION
MONGOLIA
CHINA
CANADA
Pacific Ocean
Atlantic Ocean
Indian Ocean
BRAZIL
AUSTRALIA
ANTARCTICA
Selected 3 Interrogators.
WORLD OVERVIEW (0.48)


File Edit Utility View
Toolbox Help
211819ZApr2005
Query: Start
Op-View: 1 Convoy (Iraq)
HABUR GATE IZ CHK POINT
MMO BLDG 2367
MOSUL IZ FOB MAREZ GATE B
QAYYARRA EST IZ MAIN GATE
KIRKUK IZ MULTI-CLASS YARD
SYRIA
TIKRIT IZ MAIN GATE
AL QAIMR1 IZ DOCKING AREA
BALAD IZ DAVS CLASS
KIRKUSH IZ SSA
AL ASAD IZ MAIN
IRAN
IRAQ
BAQUBAH IZ SSA
NEW CEDAR IZ REFUEL POINT ARR/DEP
NAVISTAR KU NORTHBOUND
NEW YORK KU FRONT GATE
WARNING
Flying over SAUDI ARABIAN territory without prior permission and/or flying outside routes is strictly
WARNING
Flying outside controlled and advisory airspace within IRAQ is strictly PROHIBITED. (ORP 1).
WARNING
Flying over SAUDI ARABIAN ter-

Selected 3 Interrogators.

38RNV53304528 | GN 1:5M (0.44)


BCS3 - V2.4R22.09.21 13 November 2004 - Official Use Only
File Edit Utility View
Toolbox Help
211740ZApr2005
Select: Start
Op-View: Al Taqqadum
Op-View: Al Taqqadum
AR RAMADI
AL HABBANIYAH
AL FALLUJAH
HABBANIYAH TAMUZ
BUHAYRAT AL HABBANIYAH
MARKAB NEW
AL TAQADDUM
Malahmah
'Ajal as Salim
HAMID
AL TAQADDUMR4 IZ ADACG-APOD
AL TAQADDUMR5 IZ GUARDIAN CITY SSA
AL TAQQADUMR6 IZ MDC YARD
pumping station
levees
buildings
sluice
works
38SLC42440809
TP 1:500K (1.19)


File Edit Utility View
Toolbox Help
211833ZApr2005
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Op-View: 1 Convoy (Iraq)
AL TAQQADUMR6 IZ MDC YARD
Selected 3 Interrogators.
38SLB71078558
I1 10M (1.14)

Interrogators Detections

Interrogators

From Map | All Items

Filter

Save As...

Save Selected...

View

	Name	Enabled	Last Report Time (Z)	Location (Milgrid)	Comment	Defn Time (Z)
1	23331	Yes	211919ZApr2005	38SLB712872	AL TAQQADUMR6 IZ MDC YARD	281359ZMar2005
2	25496	Yes	211722ZApr2005	38SLB712872	AL TAQADDUMR2 IZ SMU LOT	171225ZDec2004
3	25473	Yes	222056ZMar2005	38SLB712872	AL TAQADDUMR6 IZ MDC YARD	201101ZMar2005

Detections

Show All | All Items

View

Export...

Print...

Properties...

	Time (Z)	RF Tag	Type
1	211919ZApr2005	1001806	CONTAINER
2	152052ZApr2005	1002196	CONTAINER
3	060157ZApr2005	1002829	CONTAINER
4	061027ZApr2005	1002955	CONTAINER
5	141822ZApr2005	1003233	CONTAINER
6	061515ZApr2005	1004893	CONTAINER
7	171451ZApr2005	1005027	UNKNOWN
8	172321ZApr2005	1005608	CONTAINER
9	061644ZApr2005	1006458	CONTAINER
10	211500ZApr2005	1006711	CONTAINER
11	060938ZApr2005	1007272	CONTAINER
12	060549ZApr2005	1007712	CONTAINER
13	070645ZApr2005	1007713	UNKNOWN
14	170651ZApr2005	1007999	CONTAINER
15	161352ZApr2005	1008158	CONTAINER
16	070513ZApr2005	1008396	CONTAINER
17	170651ZApr2005	1008473	CONTAINER
18	160651ZApr2005	1008488	CONTAINER
19	170651ZApr2005	1008493	UNKNOWN
20	170651ZApr2005	1008494	UNKNOWN
21	211430ZApr2005	1009553	CONTAINER

RF Tags TCNs

RF Tags

Show All | All Items

Filter

Save As...

Save Selected...

View

	Name	Lead TCN	Type	Is Active
1	1001806	M9432050660837XXX	CONTAINER	Yes

TCNs | Locations

Show All | All Items

View

Export...

Print...

Properties...

	Name	Lead	Active	Item	# Tag	RF Tag	Transponder	Reported Location	Report Time	Incremer
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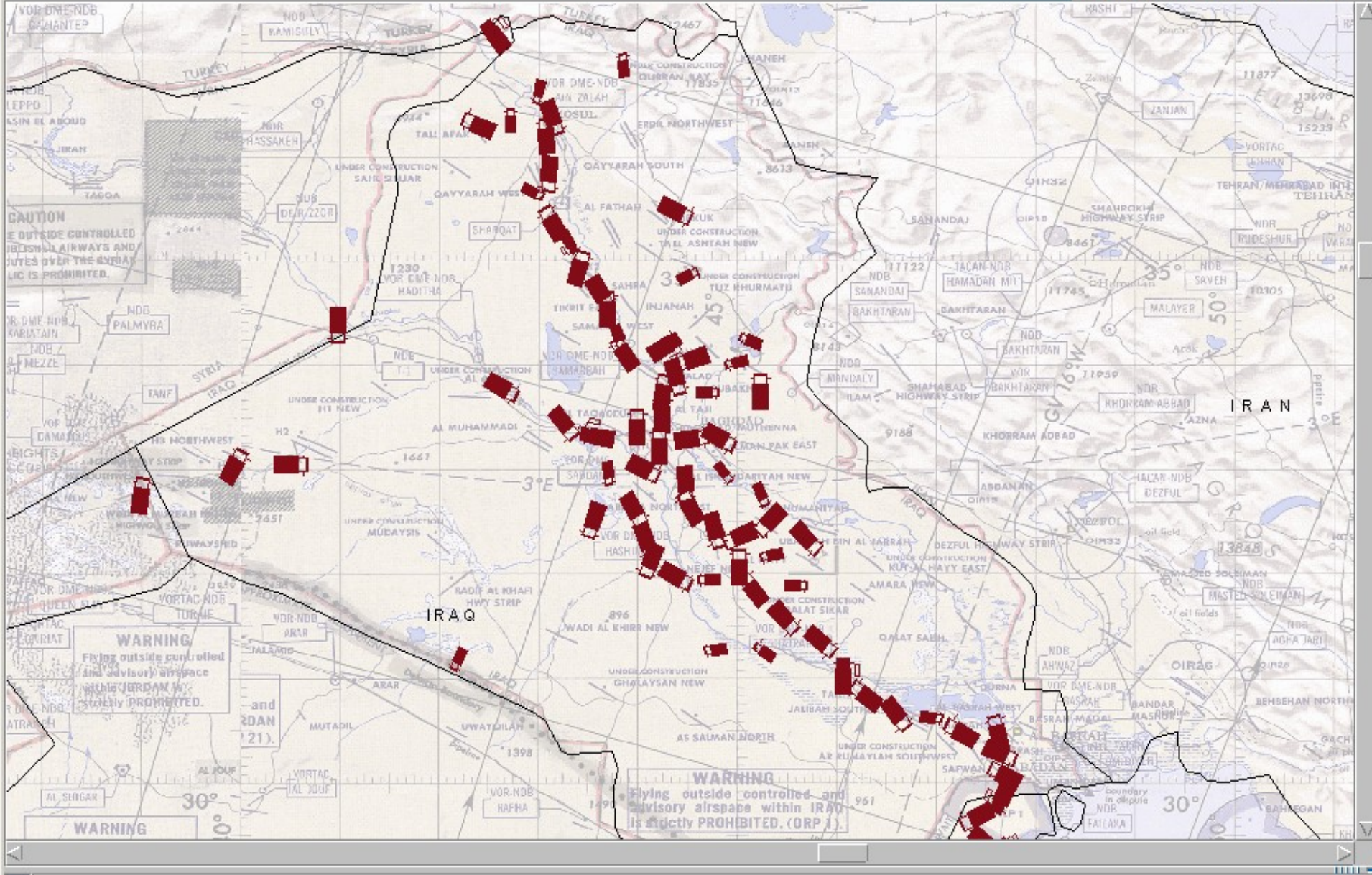

Selected 3 Interrogators.

39STS95509234 | GN 1:5M (0.48)

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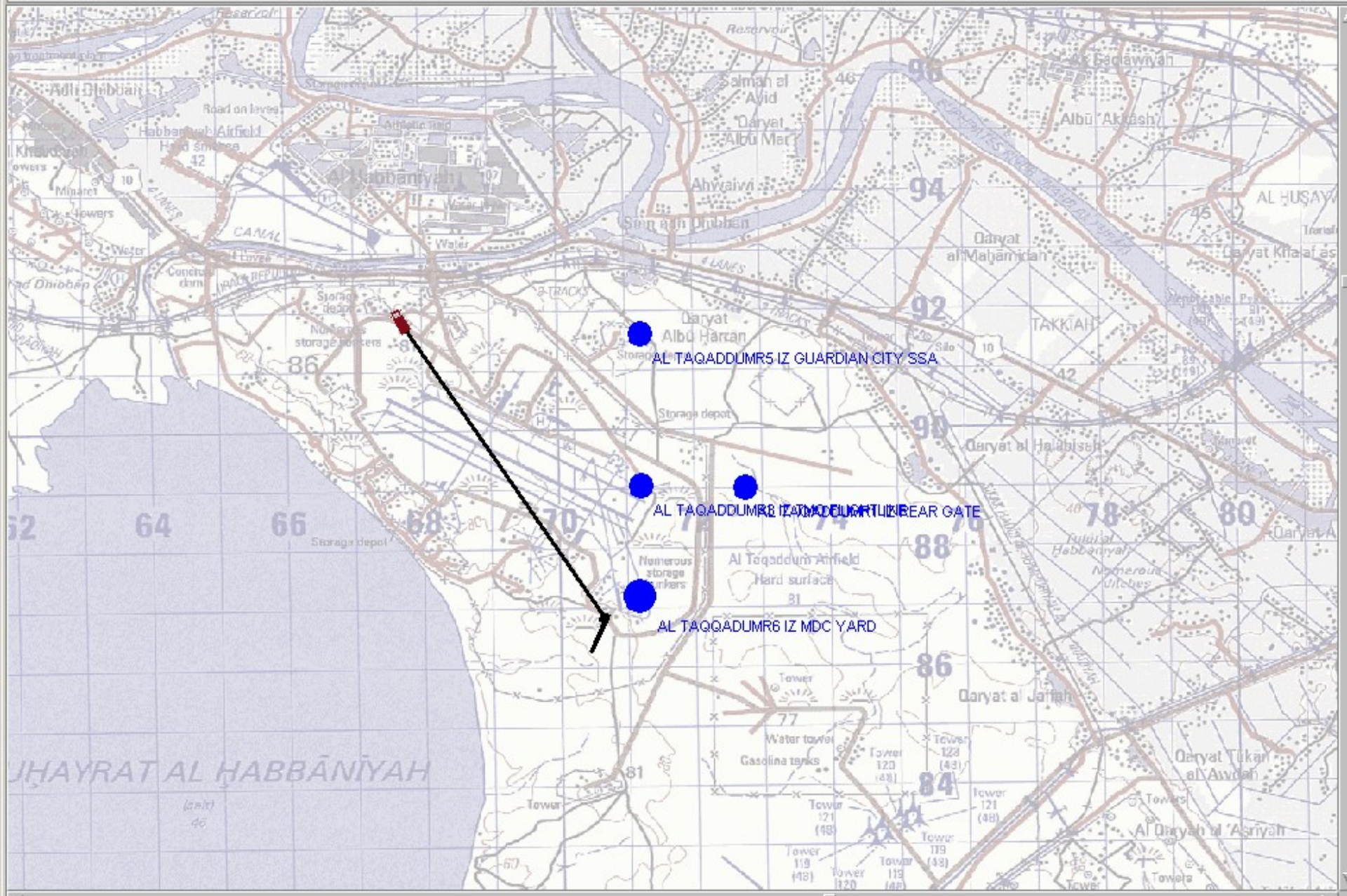
Op-View: 1 Convoy (Iraq)



38SLB65709545 TC 1:100K (0.62)

LTMITV-W2W

In-Transit Visibility to the Last Tactical Mile

Warehouse to Warfighter

LTMITV-W2W Defined

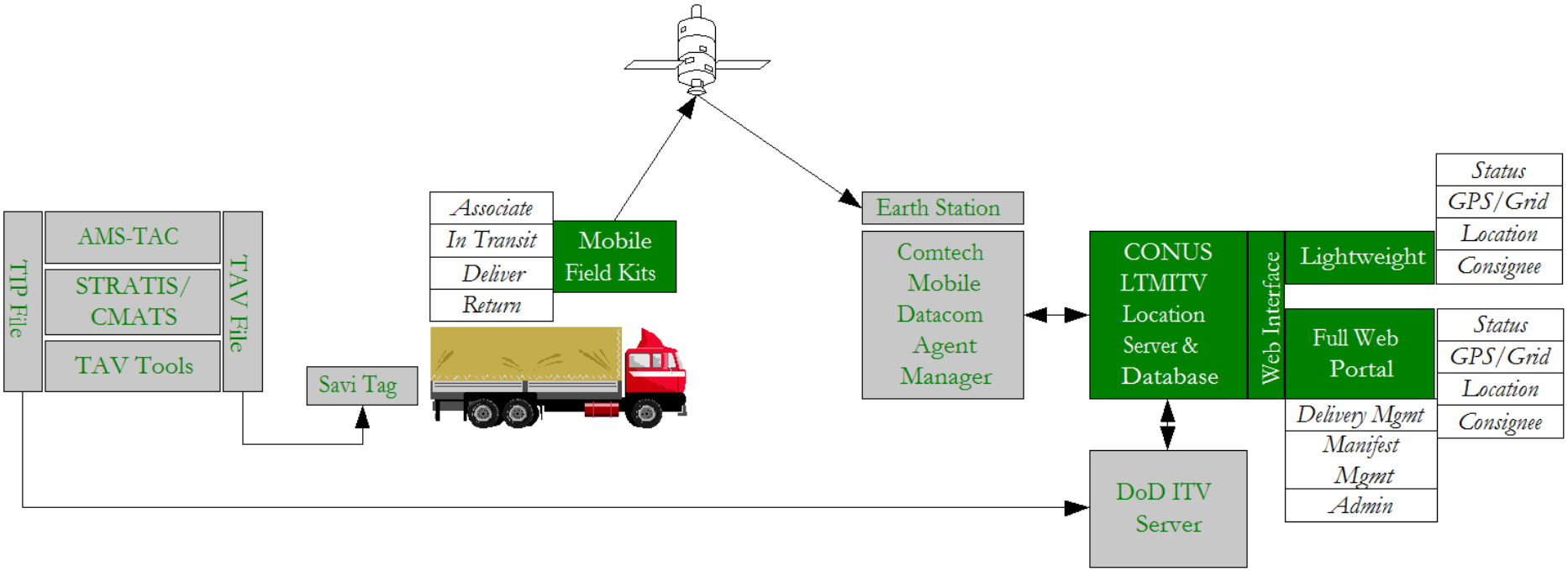
- Simplified approach to enhancing visibility of supplies forward
- *Warehouse to Warfighter*
  - ‘Last-Mile’ visibility of supplies
  - Capture of delivery/consignee transactions

What is Accomplished?

- Visibility from Warehouse to Warfighter
- Non-nodal location updates of materiel moving forward
  - Not dependent on nodal interrogators
- Electronic capture of consignee data at delivery point

2d Supply Battalion

Overview


TIP File
AMS-TAC
STRATIS/ CMATS
TAV Tools
TAV File
Savi Tag
Associate
In Transit
Deliver
Return
Mobile Field Kits
Earth Station
Comtech Mobile Datacom Agent Manager
CONUS LTMITV Location Server & Database
Web Interface
Lightweight
Status
GPS/Grid
Location
Consignee
Full Web Portal
Status
GPS/Grid
Location
Consignee
Delivery Mgmt
Manifest Mgmt
Admin
DoD ITV Server

Functional Overview

- **Location Server**
  - Receives and passes TIP files or content level detail from ITV
  - From Field Kits:
    - Receives location (GPS) updates
    - Receives camp drop, RUC pickup and RUC delivery data
  - Provides rich query and lightweight query alternatives via web interface
  - Sends AS1 and AS2 80 card column courier file updates to USMC server for consumption based on in-garrison and theatre business rules
- **Field Kits**
  - Tablet PC runs Visibility Tracking Program (VTP)
  - At delivery preparation – input of PDC, AAC and Tag ID
  - At Camp Drop, RUC Pickups and End RUC Deliveries
    - Mobile Kit – GPS updates and input of Tag ID and Consignee data
    - Fixed Camp Kit – input of Tag ID and Consignee data

Location Server

- CONUS based server
- Rich web interface requires secure sign-in
  - Allows manifest (TIP file) upload
  - Shows shipment status and location updates
  - Provides query capabilities
- Secondary ‘lightweight’ web interface allows simple queries for end users with limited bandwidth
  - No graphics
  - Simplified query options and query returns

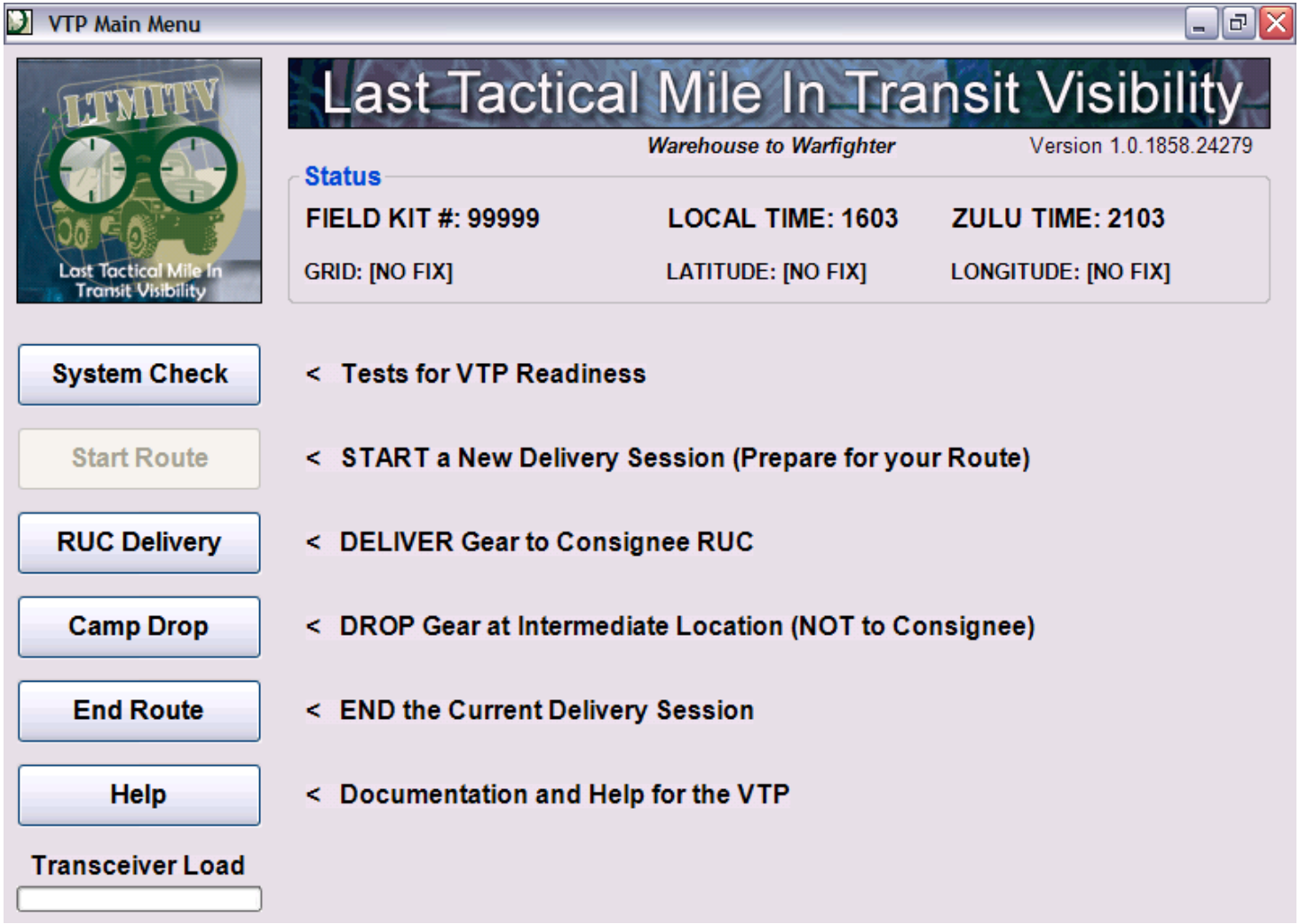
Field Kit

- Tablet PC with power supply
  - Runs Visibility Tracking Program (VTP)
- Associated kit items
  - Barcode scan
  - GPS and data communications via satellite transceiver (USB connection to tablet)
  - Integrated cable for data communications and power
  - Power inverter for plug-in power for transceiver and tablet

VTP

- Visibility Tracking Program
- Software application that runs on Tablet PC, which is part of a Field Kit
  - A few touch screen, most pen-based
  - Pen-based provide brighter screens
  - Includes graphic keyboard pop-up to allow entry of name/textual data via keyboard
  - Pen-based also provides additional means of handwriting recognition for input

2d Supply Battalion



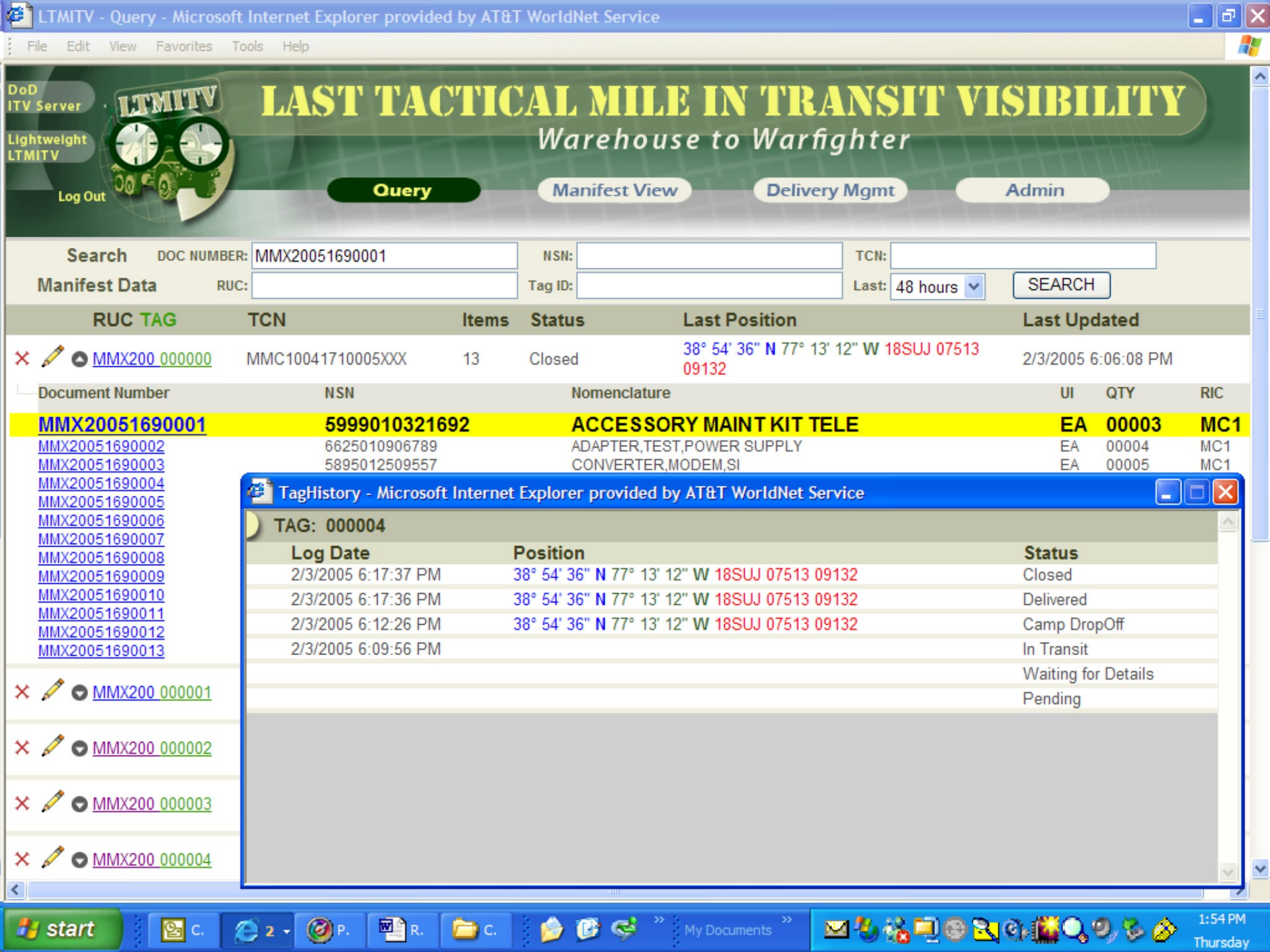
VTP Key Features

- Correlates manifest data and Tag IDs with a field kit that is placed within a delivery/convoy vehicle
- Provides a means to query location and status of materiel pushed forward via a web interface
- Can be configured 2 ways:
  - Mobile unit on each supply convoy from warehouse
    - Direct RUC delivery
    - Intermediate camp drop
  - Fixed system at each camp
    - Capture subsequent RUC pickup from camp

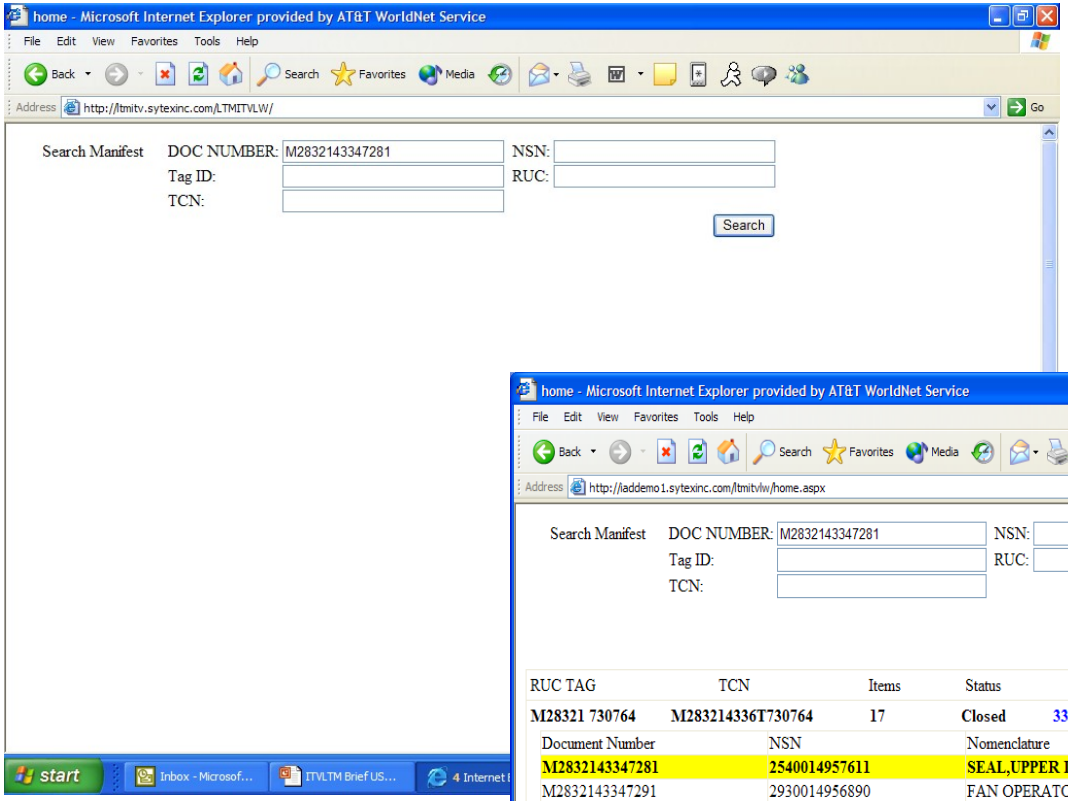
VTP Key Features (con't.)

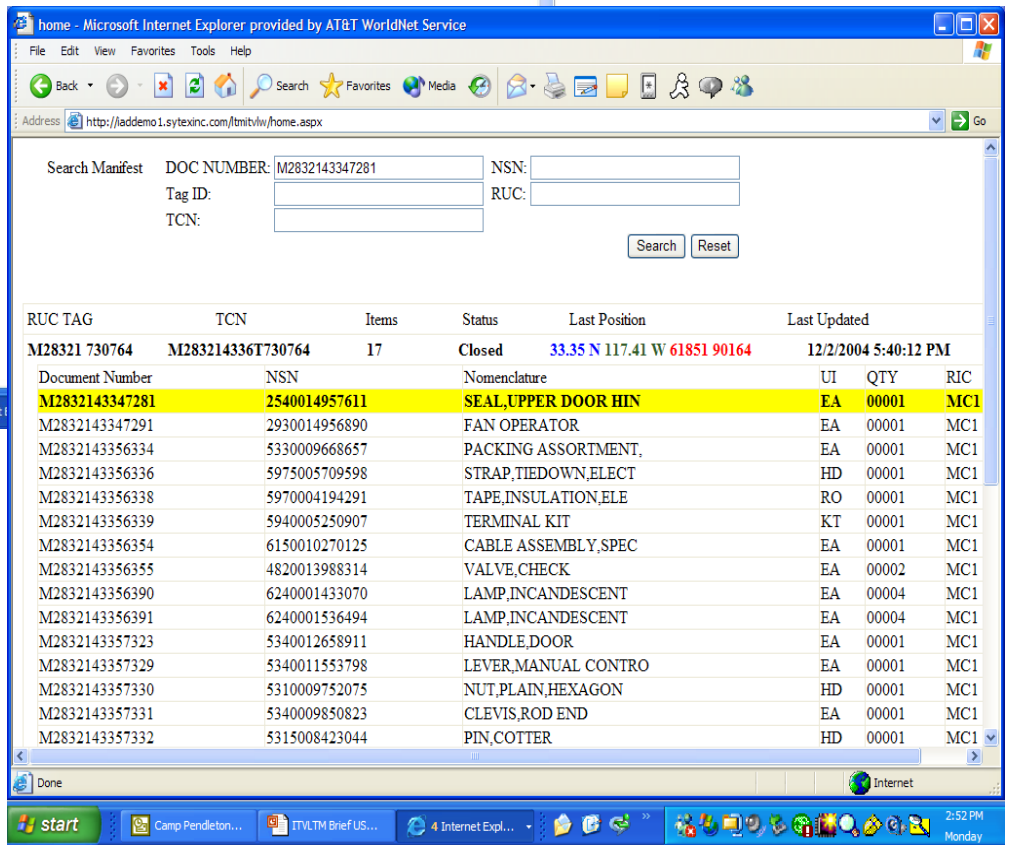
- Relies on satellite transceiver and GPS to communicate data to Location Server
  - Designed to use minimal bandwidth
  - Same transceivers as MTS and BFT
  - Provides robust seamless satellite data communications to ensure data that is sent up is not 'lost in the ether'
  - All communications between Field Kit and Satellite are encrypted
- Does not depend on a localized server
- Tablet PC does not use mapping software– it is purely an input/filter for data up to the Location Server

LTMITV
LAST TACTICAL MILE IN TRANSIT VISIBILITY
Warehouse to Warfighter
Log In
Username:
Password:
Login
I meant to go to the DoD ITV web site
I am a Using Unit with low bandwidth but would like to query LTMITV


LTMITV - Query - Microsoft Internet Explorer provided by AT&T WorldNet Service
File Edit View Favorites Tools Help
DoD ITV Server
Lightweight LTMITV
Log Out
LTMITV
LAST TACTICAL MILE IN TRANSIT VISIBILITY
Warehouse to Warfighter
Query
Manifest View
Delivery Mgmt
Admin
Search
Manifest Data
DOC NUMBER: MMX20051690001
RUC:
NSN:
Tag ID:
TCN:
Last: 48 hours
SEARCH
RUC TAG
TCN
Items
Status
Last Position
Last Updated
MMX200 000000
MMC10041710005XXX
13
Closed
38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132
2/3/2005 6:06:08 PM
Document Number
NSN
Nomenclature
UI
QTY
RIC
MMX20051690001
5999010321692
ACCESSORY MAINT KIT TELE
EA
00003
MC1
MMX20051690002
6625010906789
ADAPTER,TEST,POWER SUPPLY
EA
00004
MC1
MMX20051690003
5895012509557
CONVERTER,MODEM,SI
EA
00005
MC1
MMX20051690004
MMX20051690005
MMX20051690006
MMX20051690007
MMX20051690008
MMX20051690009
MMX20051690010
MMX20051690011
MMX20051690012
MMX20051690013
MMX200 000001
MMX200 000002
MMX200 000003
MMX200 000004
TagHistory - Microsoft Internet Explorer provided by AT&T WorldNet Service
TAG: 000004
Log Date
Position
Status
2/3/2005 6:17:37 PM
38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132
Closed
2/3/2005 6:17:36 PM
38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132
Delivered
2/3/2005 6:12:26 PM
38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132
Camp DropOff
2/3/2005 6:09:56 PM
In Transit
Waiting for Details
Pending
start
My Documents
1:54 PM
Thursday

2d Supply Battalion




home - Microsoft Internet Explorer provided by AT&T WorldNet Service
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://laddemo1.sytexinc.com/ltmitvlw/home.aspx
Search Manifest
DOC NUMBER: M2832143347281
Tag ID:
TCN:
NSN:
RUC:
Search
Reset
RUC TAG TCN Items Status Last Position Last Updated
M28321 730764 M283214336T730764 17 Closed 33.35 N 117.41 W 61851 90164 12/2/2004 5:40:12 PM
Document Number NSN Nomenclature UI QTY RIC
M2832143347281 2540014957611 SEAL,UPPER DOOR HIN EA 00001 MC1
M2832143347291 2930014956890 FAN OPERATOR EA 00001 MC1
M2832143356334 5330009668657 PACKING ASSORTMENT, EA 00001 MC1
M2832143356336 5975005709598 STRAP,TIEDOWN,ELECT HD 00001 MC1
M2832143356338 5970004194291 TAPE,INSULATION,ELE RO 00001 MC1
M2832143356339 5940005250907 TERMINAL KIT KT 00001 MC1
M2832143356354 6150010270125 CABLE ASSEMBLY,SPEC EA 00001 MC1
M2832143356355 4820013988314 VALVE,CHECK EA 00002 MC1
M2832143356390 6240001433070 LAMP,INCANDESCENT EA 00004 MC1
M2832143356391 6240001536494 LAMP,INCANDESCENT EA 00004 MC1
M2832143357323 5340012658911 HANDLE,DOOR EA 00001 MC1
M2832143357329 5340011553798 LEVER,MANUAL CONTRO EA 00001 MC1
M2832143357330 5310009752075 NUT,PLAIN,HEXAGON HD 00001 MC1
M2832143357331 5340009850823 CLEVIS,ROD END EA 00001 MC1
M2832143357332 5315008423044 PIN,COTTER HD 00001 MC1
Done
Internet
start
2:52 PM
Monday

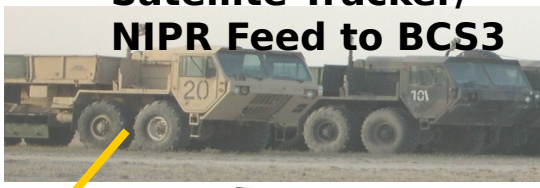
Lightweight Query

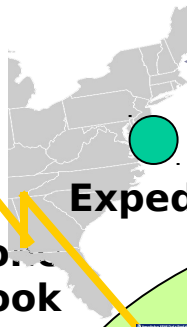
Closing Remarks

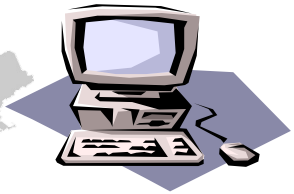
Colonel Pete Talleri
peter.j.talleri@usmc.mil

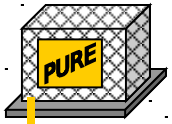
2d Supply Battalion

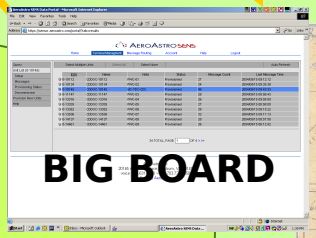
AS IS…

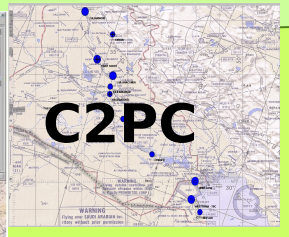












CAISI/VSAT WIRELESS NIPRNET LAN

CAISI/VSAT WIRELESS NIPRNET LAN

FSSG (FWD) LCOP

CAISI/VSAT WIRELESS NIPRNET LAN

CAISI/VSAT WIRELESS NIPRNET LAN

Road Ahead...

- II MEF LMI's "fixed" lessons learned from:
  - Gulf War (no visibility / iron mountain)
  - OIF (limited Visibility from Strategic to Operational / no LOG C2)
  - OIF II (no visibility at the last tactical mile / no DPO)
  - OIF III (lesson-learned: too much visibility / "base-line" new metrics)

- MAGTF (FWD) ITV supports GCSS-MC / Sea Basing
  - ITV from Strategic to LTM (using correct OA)
  - Logistics Comm Pipes (broadband speed / encrypted)
  - MAGTF Distribution Center (DPO)
  - QUADRENNIAL DEFENSE REVIEW "A" List

- DUSD (AT&L) Briefing 18 May 05
  - MAGTF confidence (no reordering / efficient & effective distribution pipeline)
  - RFID "Passive" technology (cheaper)
  - USMC Leading the way!

2d Supply Battalion

The next generation active RFID tag is the ST-654. This tag has the same capabilities of the existing 410 RFID tag, but is only 6.25" x 2.125"x 1.125". This tag will be used in the same manner as the existing 410 tag described above. The NSN for this tag is 6350-01-523-1998. The battery used in this tag is not compatible with the 410 tags – it is product number BAT-1125, CLIN X009CB.

Features:

- 128Kbytes or 240Kbytes Memory
- Lithium Battery is easily replaced using a coin or screwdriver - no dismounting required
- 433 MHz, active RFID technology with up to 300-foot range for monitor, wake-up, and RF write/read.
- 123 kHz receiver for slot level, choke point tag wake-up and short range commissioning.
- Small-form-factor design, ideally suited for shipping containers, vehicles and other large assets. (6.25-in. x 2.12-in. x 1.125-in.)
- Built in buzzer for tag location.
- Rugged, weatherproof design.
- Fast 28 Kbps data rate powered by lithium battery.
- Built-in firmware database, designed for rapid searching by readers for specific items stored in the tag's memory.